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ESSAY

ON THE

MANUFACTURE, CHOICE,

AND

MANAGEMENT

OF A

RAZOR.

BY E. RHODES, CUTLER, SHEFFIELD.

IT IS CERTAINLY OF SOME IMPORTANCE, THAT WHAT A MAN IS UNDER THE NECESSITY OF DOING DAILY SHOULD BE DONE WELL, AND WITH AS LITTLE INCONVENIENCE AS POSSIBLE.

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ESSAY
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INSIGNIFICANT as the subject of this pamphlet may appear, the Writer trusts that the matter it contains will not prove altogether useless. If deceived in his expectations, he may console himself with reflecting, that though useless it is not pernicious; it promulgates no injurious opinion, it subverts not any wholesome principle; and it contains

> "No line that dying he would wish to blot."—

It has likewise another advantage, for which every reader will probably be thankful,—it is *short*.

^ Shaving is

It is certainly of some importance, that what a man is under the necessity of doing *daily* should be done *well*, and with as little inconvenience as possible. Shaving with a bad, or even with an indifferent Razor, may properly be regarded as one of the "*Miseries of Human Life;*" and not the merriest in the catalogue either. It is an operation which men rather submit to than solicit: it is occasionally attended with pain, and, as it cannot be avoided, it is at any rate desirable to lessen its unpleasantness; hence, every thing like novelty in the form and make of a *Razor,* or even of a *Strap,* has hitherto been caught at with some degree of avidity: the delusion has lived its day; and, in all probability, answered the purpose for which it was created. Razors, like books, are made to sell; like books, they vary in their degrees of excellence and utility; many are indifferent, some good, and others good for nothing. In books, however, mankind are instructed how to distinguish the good from the bad; the arbiters of literary reputation, the guardians of the purity of the press, are ever on the alert, and prepared at all points to seize upon the unwary miscreant who, without a certificate of qualification, ventures within the limits of their domain. Happily, this vigilant exercise of authority preserves and promotes the public health, by guarding against the introduction of any thing pernicious, and, at the same time, prepares the way for every thing that is good. Though a provision so extremely wholesome and beneficial cannot be extended to a Razor, yet a few general rules may be laid down, by which the purchase and the management of one may be better understood, and the operation of *shaving* rendered more smooth and easy.

It is of consequence, that the Reader and the Writer of this pamphlet should understand each other in the earliest stages of their journey, otherwise, disappointed of that good entertainment on the road which is rather expected than promised, they may quarrel and separate in disgust. The Writer, therefore, warns his travelling companion, whoever he may be, not to expect too much—not to imagine that nothing but the good things of this world will be set before him; nor that he will be fully and amply compensated for the trouble of the journey he has undertaken; or, in other words, not to suppose that the information he may acquire, will enable him so entirely to rely upon his own judgment, that every future Razor he may purchase will be excellent, and that he shall never experience another unpleasant sensation from the use of one.—No rule can possibly be laid down, no instruction given, calculated to produce this effect. However, if the matter herein contained be properly attended to, the more competent will a man be to make his own selection, and the less likely to be served with an inefficient article.

Few remarks on the WEIGHT and FORM of a Razor will suffice; its primary excellence consisting in qualities of another description, namely, its regularity and fitness of CONCAVITY,—its hardness and the durability of its edge. Weight, and form are, notwithstanding, of some importance, and entitled to particular attention. The size of a Razor, which generally varies from four to five inches if manufactured on regularly established principles, determines its relative weight. It is essential that the thickness of the back of the blade, should bear a correspondent proportion to the breadth, which, generally speaking, should be as one to three and a half; though, indeed, this proportion may be permitted to vary a little, it should be understood, that the farther it is departed from, the more unserviceable does the Razor become; the reason is obvious, a Razor is honed or whetted, by resting equally upon the back and the edge; if, therefore, this operation be performed upon a narrow blade and a disproportionately strong back, a short and thick edge is produced, not any way calculated to serve the purposes of shaving with advantage. If, on the other hand, the blade be broad, and the back light, it is impossible to avoid that long and thin edge, which cannot be sustained for a moment against the opposition of a strong beard. It is therefore evident, that justness of proportion with respect to breadth and thickness, is more to be attended to than length: this, indeed, is so entirely and completely matter of choice, that any observations upon it would be obviously superfluous. The strength or thickness, and, of consequence, the weight of what workmen term the *tang,* or the finger-hold of the blade, is likewise a circumstance worthy of notice. A requisite proportion should be here preserved, otherwise the utility of the best manufactured Razor may be considerably diminished; if thick and heavy, the weight of the cutting part of the blade is so much reduced, that great pressure is required to make it bear upon its work,—if thin and light, similar to the Razors manufactured in France, it cannot be held firm in the hand; each extreme should therefore be avoided: undue strength or weight in the handle may likewise produce the former of these effects.

A question here naturally arises—How are the defects above alluded to, to be detected by persons unaccustomed to the manufacturing of Razors?—If the eye, which almost instantly observes any thing approaching to disproportion in the parts, should, in this instance, be an insufficient guide, let the hand be resorted to, it may here prove a more competent director. Before a Razor is purchased, let it be tried in the same position it is held during the operation of shaving; if thin in the tang, it will soon be discovered, that it cannot be maintained in a cutting direction without a much stronger and firmer grasp than ought to be employed on so delicate an occasion; if thick and heavy, though it may be held more easily and pleasantly, it cannot fail to be observed, that the cutting part of the blade will be so much over-balanced by the weight of the hand-hold, that here again, though from a diametrically opposite cause, considerable exertion will be necessary to apply the Razor with suitable effect.

Sensible of the advantage of a firm, and at the same time an easy hold of a Razor, some cutlers have recommended, that the sides at least, if not the whole of the tang, should be cut in the manner of a file; this rather detracts from the elegance and the high finish of the article, but its utility cannot be doubted.

FORM is of equal consequence with weight, and not by any means so dependent upon fancy as is generally supposed; one form at least has decidedly the advantage of another. On this division of my subject I can entertain but little fear of being misunderstood, because the point of the graver will speak more intelligibly than the pen; it has therefore been resorted to.

The annexed Sketches exhibit the Outline of almost every Razor now in use; their relative merits will furnish a few observations. There is not in the *form* of any of them a radical defect, since each if manufactured with care and attention, may be made to answer every purpose for which they were intended.

Inequality of breadth, which necessarily includes a proportionate inequality of thickness in the back, is however, liable to objections that arise chiefly from the additional portion of care required in the course of manufacturing, and more particularly in the very critical process of hardening; for in communicating a requisite degree of heat to the thicker parts of the blade, the thinner are frequently so much over-heated, that the whole Razor is injured beyond remedy, and its utility effectually destroyed. It must be acknowledged that the occurrence of this most formidable evil may be prevented, but only by the exercise of more care and caution than are generally used. Still, if one form be better adapted than another, to sustain the various operations of manufacturing without damage, that circumstance is of itself a sufficient inducement to adopt it, independent of any other consideration whatever.

Referring to the engraved Sketches, it cannot fail to be observed, that nearly the whole have an edge of considerable curvature, one only being comparatively straight.—Notwithstanding the great commendation which has been bestowed upon the straight-edged Razor, by the writer* of a very sensible Treatise on the subject, it is by no means adapted for general use. It is in fact fitted only for those, who, convinced that every cutting instrument, from a saw to a razor, is composed of a regular succession of teeth, or points, nearer or farther apart, have learned to distinguish between the operation of cutting, and what may, not inaptly, be denominated scraping. The latter is, however, the prevailing mode of shaving; it is the practice, in a greater or lesser degree, of almost every man who shaves himself; and as it is an evil which cannot be entirely removed, it must be partially provided against. How far this is within the power of the Razor-maker will perhaps appear from the following remarks. It may be here laid down as a principle, that whatever the form of the back of a Razor may be, the edge should always describe a portion of a circle, and the nearer it approaches to the form of No. 1, the better.

It must be tolerably evident to every man who thinks upon the subject, and who has paid attention to the manner in which a Razor is commonly used, that the blade here recommended, even if applied in the very injudicious mode above alluded to, has decidedly the advantage; passed over the face obliquely from the point to the heel, or drawn downwards without the least obliquity of direction, it must of necessity cut, even where a straight-edged Razor would do nothing but fret or tear the skin, without removing the beard. The preference here given to No. 1, is not confined to the fulness of the edge only;—the general dimensions of the blade, its equality of breadth, and consequent equality of thickness in the back, from heel to point;—its being less subject to injury in the hands of the workmen, and better calculated to admit an uniform degree of temper; these considerations combined, have induced the Writer of this Essay, to prove its efficacy by frequent recommendations, and the result has almost invariably realized his expectations.

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* Mr. Kingsbury, Razor-maker, Bond-street, London.

After all it must be admitted, that the advantage which a full edged Razor has over a straight one, in point of cutting, arises chiefly from a very defective manner of shaving; so long, however, as this defect exists, so long will the full edged Razor claim a decided superiority. It often happens that men, groaning under this very useful and necessary operation, attribute their bleedings, writhings, and contortions of face, to the badness of the Razor, when the principal fault is in themselves. Indeed, we very reluctantly acknowledge any thing like defect or error in ourselves, and are but rarely wanting in ingenuity to attach it elsewhere. This, it must be owned, is a very prevailing mistake, and mingles more or less in every transaction of life:—the blacksmith's boy, who vauntingly declared he could make a *hiss* if he could not make a *hob-nail*, actuated by this general feeling, charged the defectiveness of his workmanship upon his tools, and not upon himself.

Resuming my remarks:—*Scraping* is not precisely the same thing as *cutting;* and if, contrary to all good advice, a man will apply the whole edge of a Razor to a part of his face, and draw it in a straight line downwards, as a butcher scrapes the bristles from the back of a hog, instead of giving it at all times an oblique and cutting direction, he will often find himself in the unpleasant situation of poor Hodge, in Peter Pindar's story of the Razor-seller; and all the abuse he can pour upon the instrument in his hand, will not furnish an effectual relief:—

" In vain to chace his beard, and bring the Graces,
" He cut, and dug, and winced, and stamp'd and swore;
" Brought blood and danced, blasphemed and made wry faces,
" And curs'd each Razor's body o'er and o'er."

The next head of my subject is by far the most important, though perhaps the least attended to.—The *hardening* and *tempering* of *steel* is a process of itself extremely simple; it requires more of care than skill, on which account it is, in general, performed by workmen but very inadequately rewarded; yet, in the manufacturing of an edged instrument, the whole indeed depends on the nice management of this very simple operation, which either imparts a value to, or renders nugatory, all the labour that precedes, and all that follows it.

Practically concerned for upwards of 40 years in the hardening of steel; having had the process to perform repeatedly upon the finest and most delicate cutlery ever manufactured; having studied the subject with considerable attention; and having accurately observed and noted the result of facts as they occurred,—the Writer of this pamplet presumes he may be permitted to speak on this part of his subject, with confidence.

It is a generally prevailing opinion amongst men accustomed to the management of this process, that if steel be overheated previous to immersion, an extraportion of heat is likewise required to reduce it, or what is termed, *let it down,* to a proper degree of hardness, and that without this a good cutting edge cannot possibly be produced. This, indeed, to say the least of it, is a miserable and ineffectual attempt to remedy one error by the introduction of another. That this is an extremely injurious opinion, and that it operates perhaps more than any other cause whatever, to produce a mass of inferior cutlery, must be obvious to every one who thinks at all upon the subject.—It may be laid down as a position, which is not in much danger of being controverted, that the *lowest possible heat at which steel becomes hard is indubitably the best;* and that, in fact, to impart to it any extra-portion is essentially to affect its most valuable properties. If over-heated, the pores of steel become open and expanded, the fineness of its texture is destroyed, and it is rendered so extremely susceptible of injury from the influence of heat, that a small portion acting upon it, when it is in this state, entirely destroys its capability of sustaining a cutting edge.—It must not, however, be inferred from these remarks, that any degree of temper whatever, will operate to restore to steel the pure properties of which it has been deprived by being over-heated. Workmen, however, acting under the influence of the preposterous opinion here deprecated, manifest great carelessness in the performance of this very critical operation, always imagining the evil effects of this carelessness, may be remedied by resorting to a practice most palpably erroneous.

The reader is desired to keep in mind the position heretofore laid down, that *the lowest possible heat at which steel becomes hard is indubitably the best.* To men at all acquainted with the nature of steel, no argument will be necessary to establish this important fact; those who are not, may be referred to the foregoing and the subsequent observations.

From the commencement of this Essay, it has often been matter of regret to the Writer, that the phraseology of books and common life, when applied to subjects intimately connected with a particular manufacture, furnishes no terms by which meaning can be so accurately expressed as by the technicals of the workshop; these are always at hand, and the mind continually recurs to what it dares not use; it finds the task imposed upon it, not unlike that of translating from one language into another, in which the sense suffers by diffusion, and cannot possibly be compressed. It is, however, hoped, notwithstanding this difficulty, that the subject here treated of may be rendered sufficiently intelligible.

Articles manufactured of steel for the purposes of cutting, are, almost without an exception, hardened from the anvil; in other words, they are taken from the forger to the hardener without undergoing any intermediate process; such is the accustomed routine: the mischief it contains has either escaped observation, or is disregarded. The act of forging produces a strong scale or coating, which is spread over the whole of the blade, and to make the evil still more formidable, this scale or coating is unequal in substance, varying in proportion to the degree of heat communicated to the steel in forging; it is partially almost impenetrable to the action of water when immersed for the purpose of hardening. Hence it is that different degrees of hardness prevail in most Razors manufactured; this is evidently a positive defect, and so long as it continues to exist, great difference of temperature must exist likewise. Razor-blades, not unfrequently exhibit the fact here stated in a very striking manner; what are termed clouds, or parts of unequal polish, derive their origin chiefly from this cause*; and clearly and distinctly, or rather *distinctly* though not *clearly*, show how far this partial coating has extended, and where the action of the water has been yielded to, and where resisted. It certainly cannot be matter of astonishment, that so few improvements have been made in the hardening of steel, when the evil here complained of so universally prevails, as almost to warrant the supposition that no attempt has ever been made to remove it. The remedy, however, is easy and simple in the extreme, and so evidently efficient in its application, that it cannot but excite surprise, that in the present highly improved state of our manufactures, such a communication should be made as a discovery entirely new.

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* These clouds are sometimes produced from the blade being heated too rapidly. Wherever they are observed, the Razor is of unequal temperature.

Instead, therefore, of the customary mode of hardening the blade from the anvil, let it be passed immediately from the hands of the forger to the grinder; a slight application of the stone will remove the whole of the scale or coating, and the Razor will then be properly prepared to undergo the operation of hardening with advantage. It will be easily ascertained, that steel in this state heats in the fire with greater regularity, and that, when immersed, the obstacles being removed to the immediate action of the water on the body of the steel, the latter becomes equally hard from one end to the other. To this may be added, that, as *the lowest possible heat at which steel becomes hard is indubitably the best*, the mode here recommended will be found the only one by which the process of hardening can be effected with a less portion of fire than is, or can be, required in any other way. It has likewise another important advantage—it prevents the edge being softened by grinding on the *first*, or as it is technically termed the *dry stone*—a practice which generally prevails, and which frequently so injures the temperature of the Razor, as to render it an extremely unfit instrument for shaving. These observations are decisive, and will, in all probability, tend to establish in general use, what cannot but be regarded as a very important improvement in the manufacturing of edged steel instruments*.

FORM, WEIGHT, and JUSTNESS of PROPORTION, united with a proper degree of HARDNESS, are certainly constituent parts of a good Razor; yet its excellence depends likewise on its possessing a *regularity* and *fitness* of CONCAVITY. It is already almost generally known, that this quality is produced in the process of grinding, by the use of stones of different diameters, varying from *four* to *twelve* inches, according to the price of the article required; and it cannot have escaped observation, that this circumstance only constitutes a very esential difference of edge.

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* Nearly the whole of these observations on the subject of overheating and hardening steel, have been quoted by S. Parkes, Esq. F. L. S. in his "Chemical Essays," Vol. 2, page 501, 2nd Edition.

The grinding of Razor blades on a four inch stone, has recently so much prevailed, that a few remarks on its superior pretensions may be admitted with propriety:—it is easily discernible that a Razor thus manufactured, must of necessity possess great thinness of edge, a circumstance which, independent of any other, renders it unfit for general purposes, even though it may be used in some cases with advantage; a strong wiry beard will put all its boasted excellence to the proof; here it will be found that a less degree of concavity, and of consequence a stronger and firmer edge, is indispensibly necessary. From the observations here adduced, it appears, that the concavity of the blade should at all times be regulated by the formidableness of the object it has to encounter. Razors however, ground upon stones of about *six* or *seven* inches diameter, may be recommended as best adapted for general use; they are sufficiently hollowed, or ground out, for any service, however hard, to which they may be applied, and they combine a desirable strength and firmness of edge, with a requisite degree of thinness, providing the strength of the back, and the breadth of the blade are duly proportioned.

The CONCAVITY of a Razor should likewise possess great evenness and regularity, otherwise a very unequal edge is produced, a defect which every application to the hone will rather increase than diminish, and which nothing but re-grinding in a more perfect man-

[illegible] even No

[illegible] observe [illegible]

ner can possibly remove. There is an appearance produced upon the blade of a new Razor by the use of the hone, which affords a certain criterion by which this formidable imperfection may always be detected. The dark lines *(a)* and *(b)* in the engraved Sketch, No. 2, the one upon the edge, the other upon that part of the back which rests upon the hone in whetting, are introduced to represent the appearance here alluded to. On examining a Razor these lines are very apparent, and are easily distinguished by their difference of polish; some are ~~extremely~~ very unequal, and ~~present several~~ the [illegible] are vari~~ations~~y in breadth ~~from heel to point~~; others ~~possess~~ ~~an~~ even ~~undeviating~~ and regulari~~ty~~; these different appearances should be noted with ~~particular~~ attention, as they afford a ~~certain means~~ Rule by which the most superficial observer may ~~learn to~~ detect defective workmanship in ~~one of the requisites of~~ a ~~good~~ Razor. It can hardly be necessary to add, that where this evenness of line exists, a REGULARITY of CONCAVITY cannot possibly be wanting, nor where the contrary is the case, can a good cutting edge be ~~rationally~~ expected; ~~it may~~ however, be useful to observe, that the dark lines *(a)* and *(b)* are broader in their appearance than the honeing lines found upon a well-ground Razor, possessing a proper DEGREE of CONCAVITY: they are here designedly made so, to illustrate the remarks, and enable the purchaser of a Razor to detect one of its most obvious defects.

I have thus endeavoured to fulfil the engagement entered into with my Reader, by the communication of all that is necessary to assist and direct the judgement in the choice of a Razor. After all that has been said, it must be admitted that no infallible criterion can be established, by which all the defects that a Razor may have can with certainty be detected; some, indeed, are exposed to observation, others are hidden, and evade it; and it must appear abundantly evident, from the remarks that have been made in the course of this Essay, that *due proportion, form, temperature,* and *fitness* and *regularity* of *concavity,* must all combine to produce an excellent Razor; it must likewise appear, that the greatest care and circumspection of the maker, operating upon the best materials, cannot at all times be certain of success: I have, however, enumerated the various causes of failure, together with the constituent essentials of a good Razor; and which, if attended to, cannot but furnish to the purchaser, a tolerably strong barrier against the prospect of disappointment.

The principal part of the preceding observations were printed in a short Essay fifteen years ago, and a few copies were then privately circulated, but some additions are now necessary to complete the plan which the writer originally contemplated. Some important improvements have lately been made in the manufacturing of Razors and some new varieties introduced, which may properly be noticed in an Essay that professes to treat on the "Manufacture, Choice and Management of a Razor."

Since the publication of Mr. Parkes' Chemical Essays, this little Pamphlet has been so frequently inquired for, that the Author has been induced to re-consider the subject and supply the deficiencies of the first hasty sketch.

Razors were, in some respects, as well manufactured many years ago as they are at present: it was, indeed, at one time a principal object to make Razors *for use,* latterly, as I have before remarked, they are made to sell, without any other consideration whatever. Neither the quality of the material used, nor the excellence of workmanship appear to be at all studied. A cheap and useless instrument is too frequently foisted upon the public, and the reputation of Sheffield manufactured cutlery is grossly injured by the practice. Yet amongst the mass of indifferent cutlery now made in this ancient mart for hardware, many of its best articles are of the first quality, and equal, if not superior, to any in the world.

In my concluding observations I shall briefly notice the improvements and variations above alluded to, and refer to the engraved Sketches inserted at Page 8 for an illustration of my remarks.

The Razor Blades now most generally in use, and best calculated for shaving are exhibited in the engraved Sketches:

No. 1. Cutler's Best Razor
—- 2. Do. Straight
—- 3. Old English
—- 4. Best do.
—- 5. Criterion
—- 6. Patent Frame Blade
—- 7. Gill's Patent
—- 8. Silver Steel.

A few observations on the Razors enumerated above will constitute the remaining part of this Essay. Generally they present the same curvature of edge, and may all be recommended as well adapted for general use. Amongst all the variations that have been introduced there is not a Razor better calculated to sustain a permanently fine edge and perform the operation of shaving with ease, than No. 1. The form of the edge, the breadth of the blade, and the thickness of the back, are all regulated in conformity to the principles insisted upon as essential in the preceding remarks. All the succeeding varieties indeed, as far as form and proportion are concerned, are manufactured with reference to the same general principle. No. 3, exhibits a sketch of the Old English Razor, which in fact only differs from No. 1, in the swage near the back being left flat, for the purpose of having the name Old

English impressed upon it. Nos. 4 and 5, are variations of No. 3, and not by any means essentially better, but being invariably made of the best material and manufactured throughout with the greatest care; and more than all, not yet subject to those inferior imitations which have already affected the reputation of the Old English Razor, they may be recommended to purchasers with the greatest confidence.

No. 6. The Patent Frame-Bladed Razor was first manufactured by the Writer of this Essay, in conjunction with his late partners.

The inequality of thickness that necessarily prevails in Razors manufactured in the usual way, has ever been found a formidable obstacle to the attainment of an UNIFORM REGULARITY OF HARDNESS, without which no good Razor can possibly be made. The principle on which the new Frame-Bladed Razor is manufactured, is calculated to obviate this great defect; and it is easily discernible, that by no other means can this essential and indispensible quality, with equal certainty, be produced. It is of consequence, well fitted to sustain a firm and fine cutting edge, and it will never want re-grinding. The heel or finger-hold part of the Blade being composed of a metal not subject to rust, is another important recommendation.

Mr. S. Parkes, F. L. S. has particularly noticed this Article in his Chemical Essays, See Page 521, Vol. 2, second Edition. He there observes, " When instruments have a thick back and a fine edge, it is almost impossible ever to give them an uniform temper by the old method; for there will always be danger of the edge being lowered too much before the other parts become regularly heated throughout. This difficulty occurs particularly in Razors, where the thickness of the back is always a formidable obstacle to the *attainment of an uniform regularity of hardness.* The inconvenience in this particular instrument has been so great, that Messrs. E. RHODES & Co., of Sheffield, have invented what they call the "NEW FRAME-BLADED RAZOR," in which the back and the finger-hold are made with an admirable alloy of Copper, not subject to rust, and the blade only is made with Steel. These blades being nearly as thin at the back as at the edge, they can be tempered without incurring the danger already mentioned, and when let into a Copper back, it becomes a complete instrument."

No. 8. The last Razor in the engraved Sketches requires a more general comment:—

Some new and important improvements in Steel have lately been attempted, which if ultimately successful, will be of considerable advantage to the manufacturers of Razors and every description of fine Cutlery. Messrs. Stodart, F. R. S. and Mr. M. Faraday, Chemical Assistant in the Royal Institution, have made an interesting communication to the Royal Society of London, in which they detail a series of experiments, undertaken for the purpose of ascertaining how far the best refined Steel may be improved by an alloy of other Metals: some of these experiments appear to have been very successful in their results, and may probably, at no very distant period, prove of essential service to the town of Sheffield, where every description of Cutlery is manufactured in the highest state of perfection. The application of Chemical knowledge to the improvement of the best refined Steel, can hardly fail to be attended with beneficial consequences; this beautiful and highly useful Metal has been refined to a degree of purity and excellence, of which it was at one time thought utterly incapable, and let no one suppose that it has attained the maximum of improvement. Such a conclusion would be not only extremely unphilosophical, but injurious and absurd. The public are therefore indebted to those men who, by patient and laborious investigation, discover the hidden properties,—detect the chemical affinities of matter, and apply the secrets of nature to the useful purposes of life. Messrs. Stodart and Faraday pursued their enquiries patiently under a number of discouraging circumstances and unsatisfactory results. The combinations they anticipated did not always take place, but they finally detected the exact proportions necessary to produce a complete and perfect amalgamation of Steel, with Silver, Platina, &c. The former of these combinations, they say, produces a metal "harder than the best Cast Steel or even than the Indian Wootz, and the articles made of it prove to be of a very superior quality." They add; "The Silver alloy may be advantageously used for almost every purpose for which good Steel is required."

Anxious to ascertain to what extent Steel might be improved by an alloy of Silver, as recommended by Messrs. Stodart and Faraday, the Writer of this Essay has undertaken a similar series of experiments, the results of which have all tended to establish the importance of their researches and the accuracy of their conclusions. His next object was to bring this improved Steel into use, and establish its superiority by the excellence of the articles to which it was applied. He has now for nearly twelve months used this improved Steel in his manufactory, and hitherto the Razors into which it has been wrought have invariably proved decidedly superior for fineness and durability of edge, to any article previously introduced into the cutlery manufacture in any part of the kingdom.

ADDENDA.

To remove the objections that might otherwise be urged against the insufficiency of this Pamphlet — I shall conclude this Essay with a few observations, by way of Addenda, on the Honing and Strapping of a Razor:—

Let the hone* be seldom and but sparingly resorted to, and never unless, by frequent use and repeated strapping, *the edge* of the Razor is entirely destroyed: use the best pale oil, and be careful to preserve the hone clean and free from dust. Previously to the operation of Shaving, it will be found of service, particularly to those who have a strong beard and a tender skin, to wash the face well with soap and water, and the more time is spent in lathering and moistening the beard, the easier will the process of shaving become.—Dip the Razor in warm water before applying it to the face; use the blade nearly flat, always taking care to give it a cutting instead of a *scraping direction*. Strap the Razor immediately after using it, for the purpose of effectually removing any moisture that may remain upon the edge, and be careful not to employ a common Strap, as the composition with which they are covered is invariably of a very inferior quality, and injurious to a Razor. The strap should always be of the best manufacture, and when the composition is worn off, it will be found particularly useful to rub it over lightly with a little clean tallow, and then put upon it the top part of the snuff of a candle, which being a fine powder, will admirably supply the place of the best composition ever used for the purpose.—Another excellent mode of renovating a Razor Strap is by rubbing it well over with pewter, and impregnating the leather with the finest metallic particles.

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* The Iron Stone Hone, though but very little used, imparts the finest edge to a Razor.

The Writer of this Essay, in closing the observations in which he has indulged, cannot omit to protest against the elastic Cushion Strap, which, from easily yielding to the pressure of the Razor, removes the fine keen flat edge produced by the hone, and substitutes an injurious roundness in its place. A flat strap, not too much burthened with leather, is best adapted to continue the form which the edge assumes in honing; to admit of any other, is to subvert in practice the principles on which a good cutting edge is formed.